P2.14. CARBON UPTAKE AND RELEASE BY PLANKTON COMMUNITY IN THE CILICIAN BASIN (EASTERN MEDITERRANEAN)

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Carbon flux in the ocean depends mainly on primary production and biochemical processes within the photic zone as well as on the complex interactions occurring within the pelagic food web. In the oligotrophic areas, microbial producers and consumers dominate the food web and most of the organic carbon and nutrients are re-mineralized and recycled efficiently through microbial compartment, with little energy transfer to higher trophic levels. The Mediterranean Sea is well-known by its high oligotrophy with an overall nutrient deficit that increases towards the East. In the Northern Levantine Basin, the N/P molar ratio was found to vary between 20 and 23 in contrast to a molar ratio of 16 in the ocean. The Cilician Basin coastal system occupies the north-eastern part of the Levantine Basin between Cyprus and Turkey, and includes wide and shallow continental shelf areas. This Basin is one of target sites of the FP6 European project SESAME for studies on carbon sequestration and biodiversity. In this framework, data were collected to describe the carbon uptake and release by column water processes. Metabolic processes for C uptake (^{14}C and ^{3}H uptake) and release (respiration by Winkler procedure with automated titration) were measured. To describe micro-planktonic communities, autotrophs were characterised and quantified by measuring pigments (HPLC) and by microscopy, heterotrophic bacteria were identified by DAPI staining (total abundance). Preliminary results, derived from two stations located at different distance from the coast, showed scarce changes in bacterial (mean 7.6±1.1 x 10^5 cell/mL) and phytoplankton abundances (mean 2.0±1.1 x10^5 cell/L), with low primary production (range 0.05-0.8 mg C m^3 h^{-1}) and bacterial C production (0.002-0.05mg C m^3 h^{-1}) rates. Community respiration rates were higher (range 0.3-9.5 mg C m^3 h^{-1}) than primary production rates (P/R<1) and in the lower range of values reported for oligotrophic areas.